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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,020	12/30/2003	Yasuhiro Miwa	1018.1199101	6468

28075 7590 11/30/2005
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EXAMINER

GIBSON, ERIC M

ART UNIT PAPER NUMBER

3661

DATE MAILED: 11/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/748,020

Applicant(s)

MIWA, YASUHIRO

Examiner

Eric M. Gibson

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/30/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Wacker et al. (US006204758B1).

a. Per claim 1, Wacker teaches transmitters for a tire condition monitoring apparatus including a condition detection device for detecting a condition of the tire (908, figure 9), and an acceleration detection device for detecting a direction of acceleration of the tire (904, figure 9), wherein based on data representing the direction of acceleration detected by each acceleration detection device, whether the associated transmitter is located in the tire at the left side or in the tire at the right side is identified, and data representing condition of the associated tire detected by the associated condition detection device is wirelessly transmitted (column 4, lines 15-31).

b. Per claim 2, Wacker determines whether an acceleration has exceeded a threshold to indicate the vehicle is in motion (column 6, lines 20-32).

c. Per claim 3, Wacker teaches angular acceleration detection (902, figure 9).

d. Per claim 4, Wacker teaches that the transmitter can determine its location (column 4, lines 21-31).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wacker in view of Konchin et al. (US005790016A) and Oldenettel et al. (US006435020B1).

a. Per claim 5, Wacker teaches the invention as explained in the rejection of claim 1. Wacker does not teach using a trigger signal to initiate the wireless transmission of data, nor does Wacker teach transmitting at different timings based on the transmitter location.

b. Using a trigger signal to initiate the wireless transmission of data by the tire transmitter would have been well known to one of ordinary skill in the art at the time of the invention. The transmitters are located within the tire, and therefore have limited battery capacity. This structure necessitates a method of operation that conserves energy and only initiates communication upon the detection of a low tire condition. One such system known in the prior art at the time of the invention is taught by Konchin et al. (US005790016A). Specifically, Konchin teaches a tire pressure sensing system that includes a "trigger signal" that initiates the device by completing an electrical circuit once the tire pressure falls below a threshold amount (column 4, lines 4-16). It would have been obvious to one of ordinary skill in the art, at the time of invention, to use a

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trigger signal, such as the exemplary system taught by Konchin, to initiate the wireless transmission of data in the system taught by Wacker, in order to conserve battery life for a transmitter that is not physically accessible.

c. In addition, transmitting data at different timings based on the transmitter location would have been obvious to one of ordinary skill in the art at the time of the invention. It is a known problem in the wireless communication field that transmitter signals can collide and interfere with one another if transmitting at the same time. One solution to this problem is to assign different time intervals to the various transmitters. Oldenettel et al. (US006435020B1) is one prior art system that teaches transmitting data at different timings based on the transmitter location in a tire monitoring system (column 6, lines 51-62). It would have been obvious to one of ordinary skill in the art, at the time of invention, to transmit data at different timings based on the transmitter location in the system of the combination, in order to prevent signal collision, as is known in the art and exemplified by Oldenettel.

d. Per claim 6, Wacker teaches transmitters for a tire condition monitoring apparatus including a condition detection device for detecting a condition of the tire (908, figure 9), and an acceleration detection device for detecting a direction of acceleration of the tire (904, figure 9), wherein based on data representing the direction of acceleration detected by each acceleration detection device, whether the associated transmitter is located in the tire at the left side or in the tire at the right side is identified, and data representing condition of the associated tire detected by the associated condition detection device is wirelessly transmitted (column 4, lines 15-31). Wacker

does not teach using a trigger signal to initiate the wireless transmission of data, nor does Wacker teach transmitting at different timings based on the transmitter location.

e. Using a trigger signal to initiate the wireless transmission of data by the tire transmitter would have been well known to one of ordinary skill in the art at the time of the invention. The transmitters are located within the tire, and therefore have limited battery capacity. This structure necessitates a method of operation that conserves energy and only initiates communication upon the detection of a low tire condition. One such system known in the prior art at the time of the invention is taught by Konchin et al. (US005790016A). Specifically, Konchin teaches a tire pressure sensing system that includes a "trigger signal" that initiates the device by completing an electrical circuit once the tire pressure falls below a threshold amount (column 4, lines 4-16). It would have been obvious to one of ordinary skill in the art, at the time of invention, to use a trigger signal, such as the exemplary system taught by Konchin, to initiate the wireless transmission of data in the system taught by Wacker, in order to conserve battery life for a transmitter that is not physically accessible.

f. In addition, transmitting data at different timings based on the transmitter location would have been obvious to one of ordinary skill in the art at the time of the invention. It is a known problem in the wireless communication field that transmitter signals can collide and interfere with one another if transmitting at the same time. One solution to this problem is to assign different time intervals to the various transmitters. Oldenettel et al. (US006435020B1) is one prior art system that teaches transmitting data at different timings based on the transmitter location in a tire monitoring system

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(column 6, lines 51-62). It would have been obvious to one of ordinary skill in the art, at the time of invention, to transmit data at different timings based on the transmitter location in the system of the combination, in order to prevent signal collision, as is known in the art and exemplified by Oldenettel.

g. Per claim 7, Wacker teaches that the receiver can determine the location of the transmitter based on the received signal (column 4, lines 15-31).

h. Per claim 8, Wacker determines whether an acceleration has exceeded a threshold to indicate the vehicle is in motion (column 6, lines 20-32).

i. Per claim 9, Wacker teaches angular acceleration detection (902, figure 9).

j. Per claim 10, Wacker teaches that the transmitter can determine its location (column 4, lines 21-31).

3. Claim 11 is rejected as obvious over the combination of Wacker, Konchin, and Oldenettel, and further in view of Koch et al. (US005562787A).

a. Per claim 11, the combination teaches the invention as explained in the rejection of claim 6, including the transmission of data at different timings. The combination does not explicitly teach periodically transmitting the data. As discussed above, Konchin is relied upon for the teaching of transmitting the tire data upon the detection of a trigger signal in order to conserve battery life. Alternatively, signals may be transmitted on a periodic basis in order to conserve battery life. The equivalency of these methods of battery conservation for a tire transmitter system would have been well known to one of ordinary skill in the art at the time of the invention. Koch et al.

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(US005562787A) is an exemplary teaching of using either a trigger signal arrangement or periodic readings of an in-tire transmitter for the conservation of battery power (see column 10). It would have been obvious to one of ordinary skill in the art, at the time of invention, to periodically transmit the data in the system of the combination, as a known alternative to a trigger signal transmitting function, as evidenced by Koch.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Stewart et al. (US 20030197603A1) teaches determination of wheel sensor position using a wireless solution. King et al. (US006788193B2) teaches a system and method for tire pressure monitoring providing automatic tire location recognition. Robillard et al. (US006259361B1) teaches a tire monitoring system.

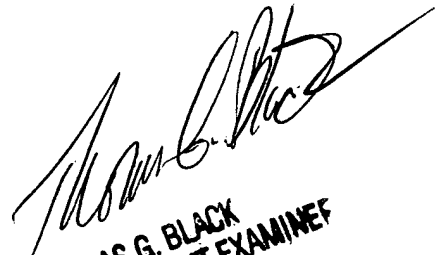
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric M. Gibson whose telephone number is (571) 272-6960. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EMG


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